Nursing Section; paper by Edith S. Brent, Brooklyn, N. Y., on "District Nursing;" a pamphlet published by the Victoria Order of Nurses by Countess Aberdeen on "District Nursing;" "The History of District Nursing," Dr. A. Worcester, M.D.; a small volume on "District Nursing" by William Rathbone, M.P.; a work on "District Nursing" by Mrs. Dacre-Craven.

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## THE NURSING CARE OF ORTHOPÆDIC SURGICAL CASES

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THE diseases of children which come under the treatment of orthopædic surgery are tedious in their cure and require continued and careful nursing.

Orthopædic surgery has to do with the correction of deformities by operative measures and mechanical apparatus. To intelligently understand the result the latter method is to produce, the nurse should be conversant with the mechanism of the various implements, how they are made, what they are to do, how they are adjusted, and their proper care.

The majority of orthopædic cases are met with among the poorer classes, and while the patients are undergoing treatment during the acute stages in the hospitals, it is in the convalescent stages that the nurse's work plays so important a role. The prevalent complaints demanding orthopædic measures are rhachitis, tubercular vertebræ, disease of hip and other joints, flatfoot, curvature of the spine, cerebral infantile paralysis, and malformations of bone due to various causes. Each must naturally have its own special and individual care. If the caretakers of children and those who are working in their midst were more on the alert in watching their progress and growth, their discernment would enable them to adopt effective prophylactic measures against the development of these diseases. Affections of the bones do not occur suddenly, but are attended by many symptoms usually unobserved in their early stages, but which if noticed in time and proper measures were taken would prevent many months and years of suffering and deformity.

If one is to deal with the abnormalities of children, she should first know the habits of a normal child, note its pulse and respiration at certain ages, the position the child naturally takes, its characteristic walk, normal attitude in standing, sitting, reaching, and stooping, also its attitude and breathing during sleep. Tuberculosis may be said to be the foundation of orthopædic cases in children, and Pott's disease may be mentioned as one of the chief types of the group. "Pott's disease is

a chronic destructive pathological process which primarily attacks the bodies of the vertebræ, and one of whose chief symptoms is muscular rigidity at the affected portion of the spine." Peculiar attitude and gait and referred pain are the prominent early symptoms, and on their early recognition depends the benefit to be derived from treatment. Pott's disease is commonly in the cervical, dorsal, and lumbar regions, though it occurs also in the thoracic region.

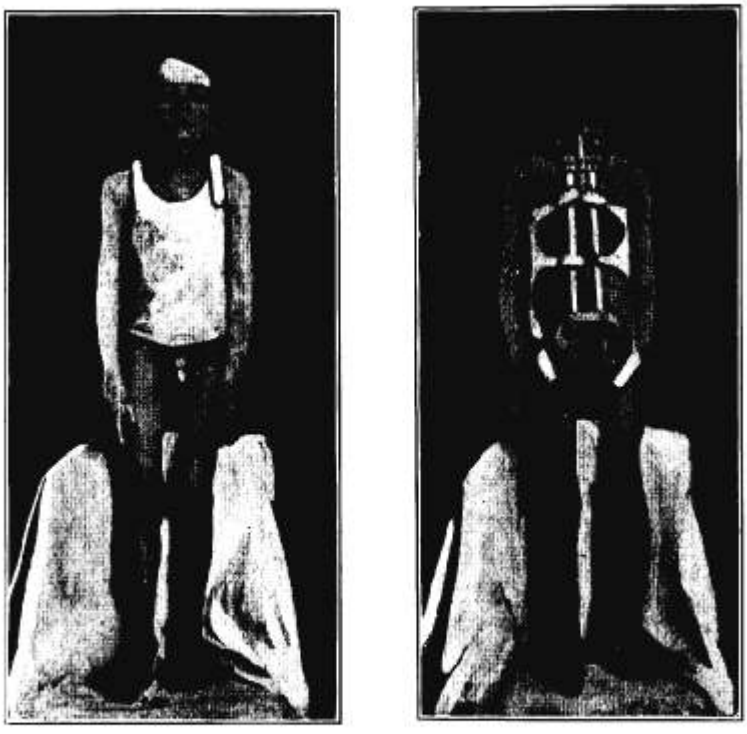
The vertebral column being the chief support of the body, and having the power to accommodate its mobility to all movements of the body, any disease of the vertebræ must interfere with normal motion. An observer's attention may be called to the child's peculiar attitude by noticing its stiff and awkward positions in trying to do certain things, due to an unconscious effort on the part of the child to prevent jar or increased pressure upon the affected vertebræ. In disease of the upper cervical region wry-neck is the common attitude; in the lower cervical or upper dorsal region the chin is held somewhat raised to balance the weight of the head. Disease in the lower dorsal and lumbar regions makes the child's erectness noticeable, with an increased hollowness in the back and a correspondingly prominent abdomen.

The walk is characterized by tip-toeing and bending of the knees, to prevent a jar upon the vertebræ by the heels being brought down to the floor. Muscular stiffness is characteristic of Pott's disease, and when the lower part of the spine is affected it is often impossible for the child to bend the back forward,—thus in picking up an object from the floor he will keep the spine erect, lowering himself to the floor by bending the knees. One's attention may be attracted by the child's inability to engage in normal play and by its unusual fatigue,—a desire to lie down or to rest, supporting the head with its hands, or the trunk by holding on to the thighs, according to the part of the spine affected.

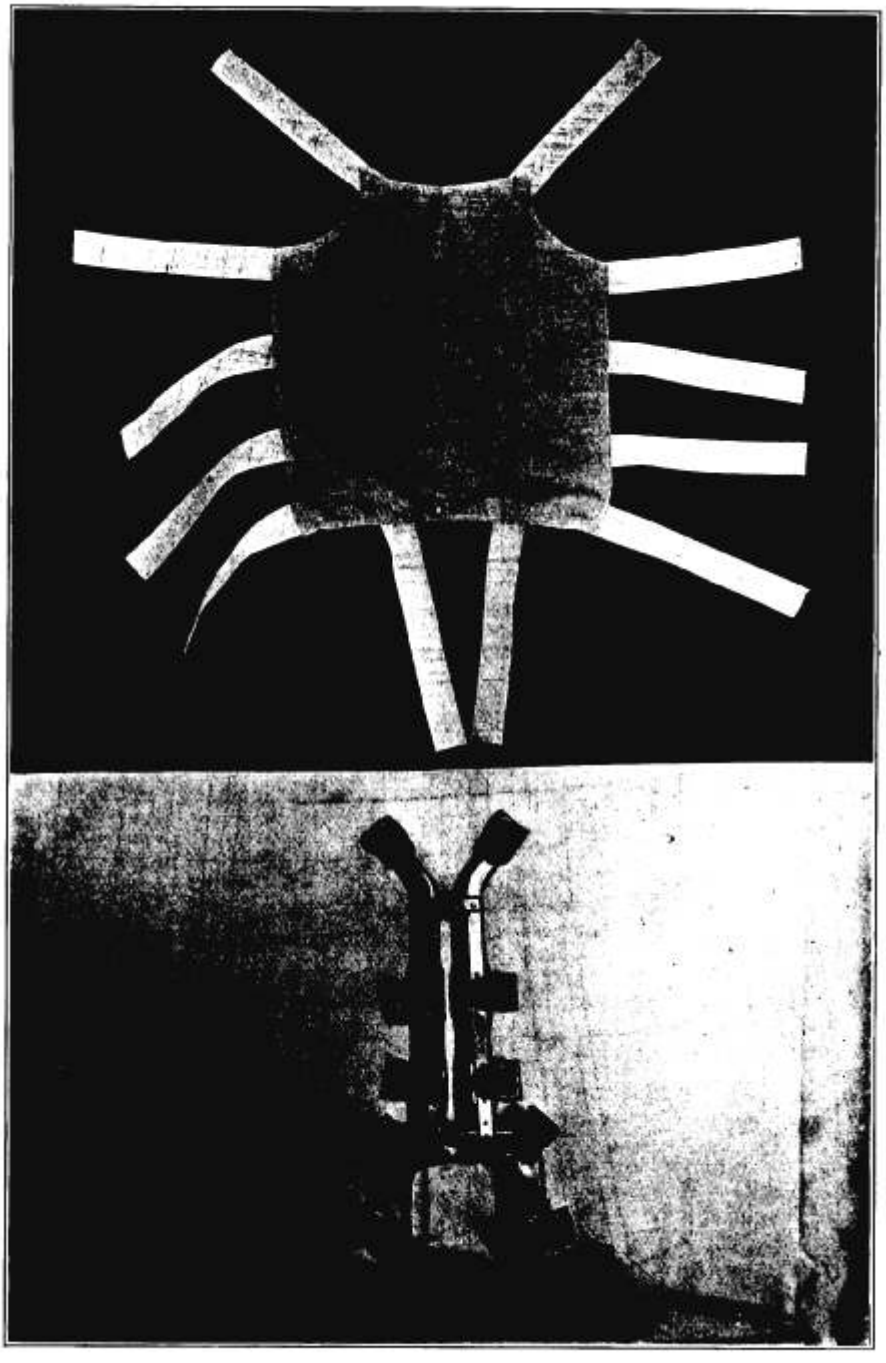
Pain and sensitiveness to touch are not looked for at the place of deformity in the spine. Pain may be felt in almost any portion of the body,—the head, legs, arms, and stomach,—being referred to these parts by means of the nerves which have their origin in the spinal cord and are in relation to the affected vertebræ.

Pain is worse at night, as in sleep the child unconsciously relaxes from guarded positions assumed when awake, and we hear what are known as "night-cries." Partial or complete paralysis of the legs, either early or late in the disease, and abscess in the back wall of the pharynx or along the course of the psoas muscle are the frequent complications.

Treatment of the disease differs in the acute, subacute, and convalescent stages. The acute stage requires absolute rest. The purpose is to fix the child in a position on a hard surface so as to have no super-



TAYLOR BACK-BRACE WITH HEAD SUPPORT, APPLIED



THE TAYLOR BACK-BRACE AND APRON

incumbent weight pressing upon any portion of the spine. Bradford frames are used for this, and the nurse must know the proper size, the size of the covers, how to make them and how they should fit, the kind of straps and their use, and the proper use of pads for intervertebral pressure; she must also know the importance of the proper care of the child's back—that it must be washed, rubbed with alcohol, and powdered daily. The frame itself should be four or five inches longer than the patient and a little wider than the breadth of the shoulders. The coverings, preferably of canvas, should be laced across the frame evenly and firmly, with a space left for the buttocks.

The whole aspect of a child on a Bradford frame should strike the observer's eye immediately as one in which every detail of equipment is perfect: there should be a uniform appearance, a perfect relationship of the child to its position, and absolute cleanliness and neatness.

In the subacute and convalescent stage the patient is allowed out of bed while wearing some appliance to give relief to the diseased vertebræ from the body-weight. This is done by braces and plaster-of-Paris jackets.

A poor jacket does more harm than good, and it is within the nurse's province to know how to make plaster bandages and how to apply them; to know the proper kind of shirting to be worn under the plaster, its fit, the kind of padding, and its purpose. The nurse should know when the jacket needs changing, and she should always guard the skin from chafing and know the remedies for excoriations. Instead of plaster, steel appliances may be used for fixation of the spine, and a knowledge of the proper kind of straps, pads, and buckles comes in here, as well as of the proper adjustment of the apparatus.

Psoas contraction, usually the result of psoas abscess, is treated by extension made on the leg, and here the nurse must be able to discern the amount of flexion, its gradual reduction, and according to this must know the amount of traction required on the leg, and also the graduated amount of pillows or pads necessary to keep the leg in proper position.

Lateral curvature of the spine is not a disease, but a distortion of growth. Suffering in this is caused by altered muscular strain and the pressure upon nerves of displaced organs. The objects of treatment are to remove the superincumbent weight, to strengthen the spinal column, and to prevent it from being constantly held out of line. Recumbent position, exercise, or forcible correction, as the individual case calls for, tonics, improvement of digestion, and fresh air are the means to accomplish these. The kind of exercise must be governed by the special case, and those who have this in charge must know which exercises place and

maintain the spine in its best position, and which exercises develop the muscles brought into play in this position.

The system of Swedish movements is generally employed, and in many institutions the method of Teschner. (See *Annals of Surgery*, August, 1895.)

Tuberculous disease of the hip is the most common of the affections of the joints. Injury to the hip may be a predisposing factor to the growth of the tubercle bacilli there. The symptoms of the disease are pain and limp, followed by stiffness, distortion, and atrophy.

Pain in the knee, referred there by the nerves, is the characteristic pain of hip disease. The "night-cry" is of significance, accounted for by the relaxation of the voluntary and involuntary protection of muscles, which excites muscular contractions and brings the sensitive parts together. The cry is sharp, and the child is usually found holding the thigh with the hand or pressing upon the limb with the other foot.

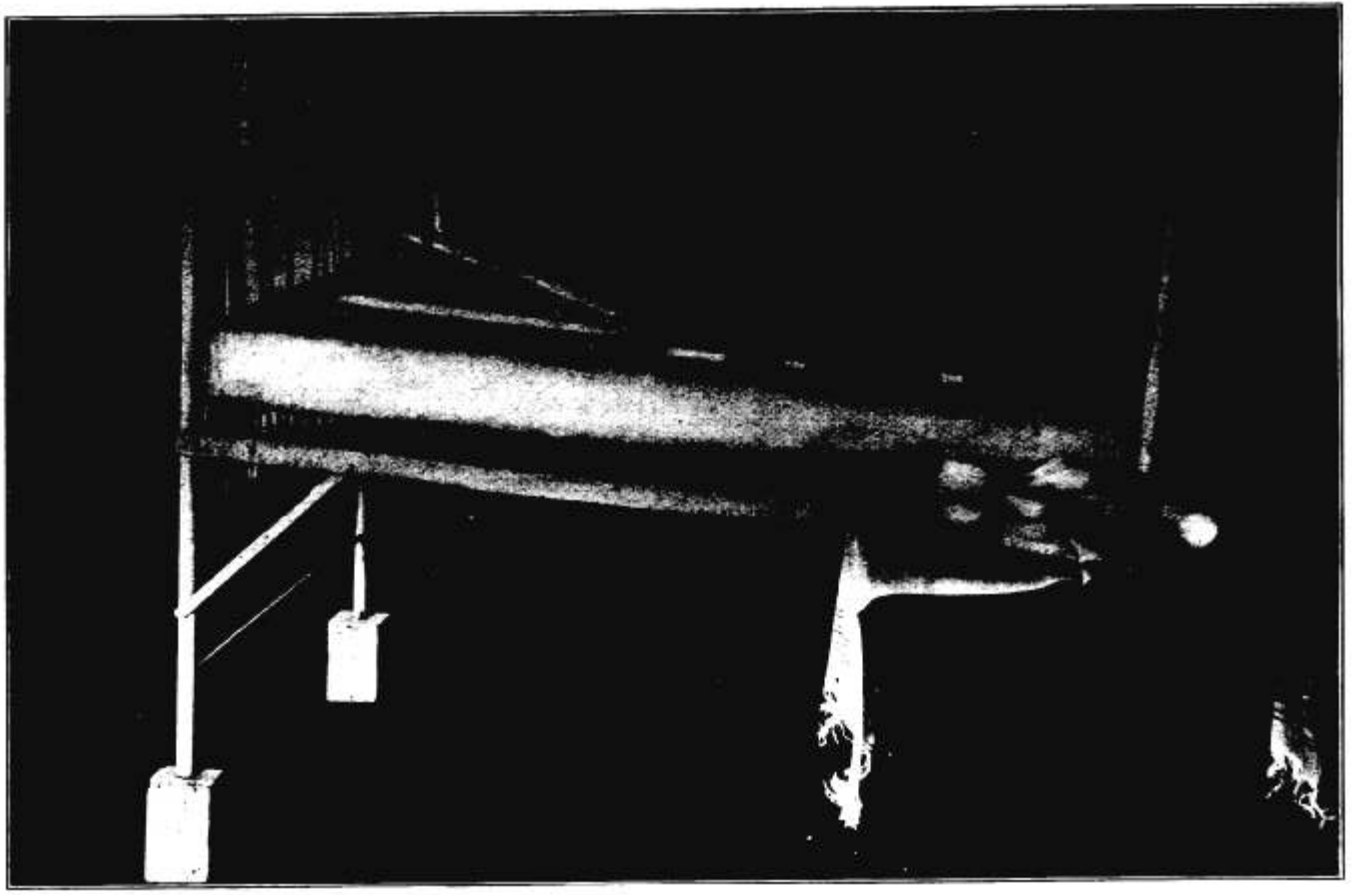
The limp, at first due to sensitiveness, changes the normal function of the limb and brings about an inequality in length and limitation of motion. With the limp there is stiffness due to reflex muscular spasms, and following this is flexion, abduction, and outward rotation.

As the disease progresses the limb becomes more incapable of performing its proper function, and the attitude changes to increased flexion and abduction, in which attitude the limb is best protected from injury. The purpose of treatment is to secure rest and protection and gradually bring the leg to normal position. Traction of sufficient force is made upon the limb to overcome and control the spasmodic action of the muscles.

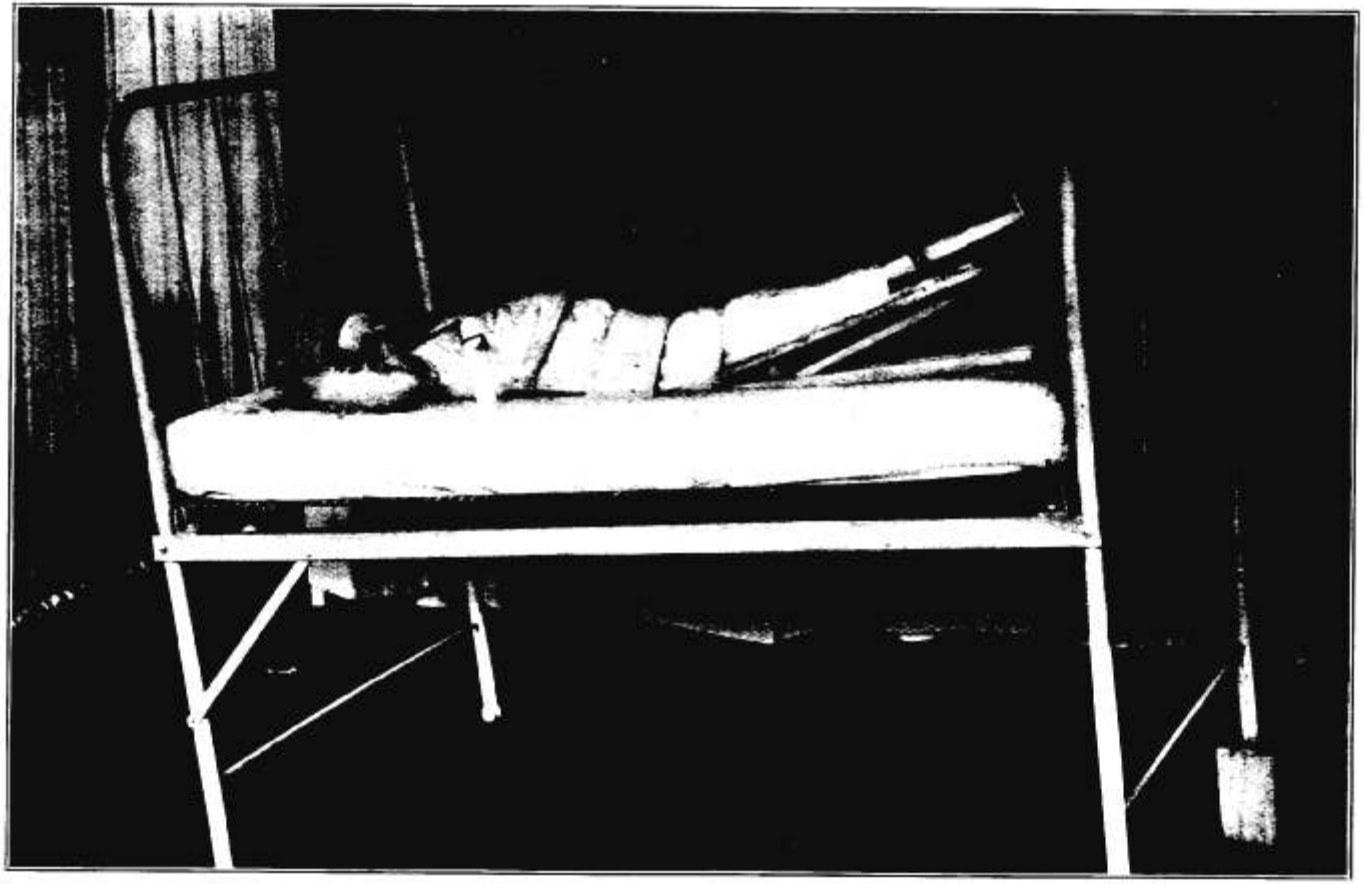
If the child is to be kept at complete rest, he is placed upon a Bradford frame and the affected limb is raised until the lumbar vertebræ rest upon the bed, and next the leg is moved to one side until the level of the pelvis is established. At this angle the leg is put up in extension by means of weights and pulleys. Adhesive strapping on the outer and inner sides of the leg from the thigh to the ankle are put on to make connection with the tapes holding the weights over the pulley.

The nurse must understand the proper position of the child, the care of and the proper appliance of the apparatus, and the care of the skin at places where irritation could occur. She must know how to handle the child without jarring it and how to care for it without interfering with the required amount of constant traction. If a hip which needs continued traction of a certain number of pounds for protection from muscle spasm is left for a time with a reduced amount of weight, the joint may receive serious damage.

If a Taylor hip-brace or a plaster-of-Paris spica bandage up the



EXTENSION ATTACHED TO BED



CHILD IN EXTENSION

leg and around the pelvis is used for ambulatory treatment, the nurse has to be conversant with their object, care, and manner of appliance.

Another group of importance coming under orthopædic cases are those due to various types of paralysis—such as cerebral hemorrhage, infantile paralysis, and congenital defects resulting from cerebral hemorrhage. The characteristic symptoms are persistent stiffness and constant spasm of the muscles of the leg and sometimes of the arm. The walk is characterized by a clinging gait,—the feet scrape along the floor. The affected foot is cold. The treatment is to counteract the influences producing these results, to stimulate the muscles by electricity and persistent rubbing of the paralyzed limb. Much depends upon the mental training in order to make as active as possible the remaining functions of the brain.

In congenital club-foot much can be accomplished by mechanical correction. In a new-born infant the deformity may be rectified by manipulating the foot several times a day and holding it as straight as possible for a minute or two at a time. Later it is frequently treated by fixation in a plaster-of-Paris bandage; and watchfulness must be exerted to guard against injuries to the circulation. If a brace has been worn, and the deformity has been corrected sufficiently to do away with the brace, the walk of the child must be carefully watched and care taken to have the shoe of proper shape and size.

The children afflicted with the above-named diseases, particularly tuberculosis, are invariably of a nervous and irritable temperament, and the mental and moral care cannot well be separated from the physical, as the success of one so largely depends upon that of the other.

At the time of surgical dressings the nurse's great object should be to gain the confidence of the child, never to deceive it; to be firm and yet gentle, and she should try to divert the child, not by talking of what is to happen at the present time, but by directing its attention to a foreign subject.

The ideal way of looking after these children in their homes would be for the city hospitals to appoint a nurse who has previously had them under her charge while in the hospital, to make visits of daily inspection to see if plaster casts are in proper order, if braces are properly put on and in good condition. The nurse could then instruct the mothers as to hygienic surroundings, bathing, clothing, food, exercise, and sleep. Such a plan is simple and comparatively inexpensive, and if efficiently carried out would be of almost incalculable benefit to any community. The health and welfare of the children are always of paramount importance, and every available measure which tends to secure them should be adopted and constantly utilized.